IN THE CLAIMS

1-95. (Canceled)

96. (New) A biopsy device for taking tissue samples, comprising: a housing containing an electric power source and a tension slide connected to the power source, wherein the tension slide is brought into a cocked position against the action of a spring by the power source; a removable element configured for insertion into the housing, comprising: a biopsy needle unit, comprising a hollow biopsy needle, having a sample removal chamber, and a cutting sheath, wherein the biopsy needle unit is arranged on the tension slide; a vacuum pressure-generating device; and a connection element connecting the biopsy needle unit and the vacuum pressure-generating device; and a control panel attached to the housing.

97. (New) The biopsy device according to claim 96, wherein the vacuum pressure-generating device comprises a syringe unit having a cylindrical housing and a plunger positioned in the housing, the housing having a ventilation opening in an upper part thereof which may be opened to dissipate a created vacuum by retraction of the plunger.

98. (New) The biopsy device according to claim 97, wherein the plunger is movable in a forward and a reverse direction by means of a controllable spindle actuator.

99. (New) The biopsy device according to claim 98, further comprising at least one DC motor with secondary planet gearing contained within the housing, wherein the controllable spindle actuator is powered by the motor.

100. (New) The biopsy device according to claim 99, wherein the transmission from the planet gearing to the spindle occurs via a single-stage gearing, and wherein a threaded spindle nut mounted on the syringe unit housing carries a toothed crown.

101. (New) The biopsy device according to claim 100, wherein the motor with secondary planet gearing is controlled by measuring the speed of revolution such that the plunger in a first step is moved from a distal end of the housing to a first point adjacent but distal the ventilation opening, in a second step is moved first proximal the ventilation opening to open the ventilation opening and dissipate the created vacuum and then distal back to the first point to close the ventilation opening, and in a third step is moved in a distal direction to create excess pressure, the first, second and third steps being coordinated with the controlling of the sample removal and the ejecting of the sample.

102. (New) The biopsy device according to claim 101, wherein the speed of revolution of the motor is measured by a photocell permanently arranged on a motor housing and a pickup arranged on a motor shaft.

103. (New) The biopsy device according to claim 102, wherein the speed of revolution of the motor is compared against a nominal value previously stored in electronic components of the biopsy device and used to trigger control of the spindle actuator.

104. (New) The biopsy device according to claim 97, wherein the plunger for generating a vacuum in the system and in the sample removal chamber is moved in a first step in a proximal direction from the housing distal end to a first point adjacent but distal the ventilation opening.

105. (New) The biopsy device according to claim 104, wherein in order to ventilate the system, the plunger in a second step is moved to a second point proximal the ventilation opening, and wherein after the vacuum is dissipated the plunger is moved back to the first point.

106. (New) The biopsy device according to claim 105, wherein the plunger in a third step is moved in a distal direction to create an excess pressure in the sample removal chamber.

107. (New) The biopsy device according to claim 96, wherein an inner space of the hollow biopsy needle is connected to an inner space of the vacuum pressure-generating device by the connection element such that an airtight connection is established.

108. (New) The biopsy device according to claim 107, wherein the connection piece comprises a flexible hose.

109. (New) The biopsy device according to claim 96, wherein the control panel is connected to a plurality of actuators, wherein a first actuator controls both the tension slide and the cutting sheath.

110. (New) The biopsy device according to claim 96, wherein the biopsy needle unit comprises recesses that are configured to receive brackets on the tension slide.

111. (New) The biopsy device according to claim 96, wherein the tension slide is placed in a cocked position by a spindle actuator driven by means of a DC gear motor with single-stage secondary transmission.

112. (New) The biopsy device according to claim 111, wherein the tension slide can be mechanically locked in the cocked position.

113. (New) The biopsy device according to claim 112, further comprising a double-arm lever, which can be adjusted about an axis under spring pressure, wherein a first arm is acted upon by a compression spring, and a second arm engages with a recess of the tension slide.

114. (New) The biopsy device according to claim 112, wherein a toothed roller is placed on a take-off shaft of a planet transmission connected to the DC gear motor, which engages with a gear of a spindle actuator connected to the cutting sheath.

115. (New) The biopsy device according to claim 114, wherein the gear of the spindle actuator thrusts against a holder of a base block during displacement of the tension slide.

116. (New) The biopsy device according to claim 100, wherein the cutting sheath is coaxially positioned around the biopsy needle.

117. (New) The biopsy device according to claim 116, wherein the biopsy needle with coaxial cutting sheath and other elements arranged thereon are held at two bearing points in the biopsy needle unit so that the biopsy needle and/or the cutting sheath can turn individually.

118. (New) The biopsy device according to claim 117, wherein the threaded spindle nut is press-fitted into the biopsy needle unit and forms one of the two bearing points.

119. (New) The biopsy device according to claim 97, wherein the syringe unit is designed such that a vacuum is generated in the sample removal chamber on the order of approximately 200 hph.

120. (New) The biopsy device according to claim 96, wherein the biopsy needle comprises a narrowing positioned in a lumen of the biopsy needle at a proximal end of the sample removal chamber, the narrowing being positioned at a top portion of the lumen, leaving a passage at a bottom portion of the lumen.

121. (New) The biopsy device according to claim 120, wherein the narrowing comprises 60-75% of the cross section of the lumen.

122. (New) The biopsy device according to claim 120, wherein the narrowing comprises a stopper having a length of approximately 10 mm.

123. (New) The biopsy device according to claim 120, wherein the narrowing is formed as a lip or dog protruding into the cross section of the lumen.

124. (New) The biopsy device according to claim 96, wherein an opening of the sample removal chamber comprises approximately 25% of the cross section of the biopsy needle.

125. (New) The biopsy device according to claim 96, wherein a miniature switch is integrated into an end cover of the housing, the activation of which enables the power source.

126. (New) The biopsy device according to claim 125, wherein a switch pin of the miniature switch is activated when a housing cover presses down the vacuum pressure-generating device.

127. (New) The biopsy device according to claim 96, wherein means are provided on the biopsy needle unit to prevent closing of a housing cover when the tension slide is cocked and the biopsy needle unit is installed.

128. (New) The biopsy device according to claim 96, wherein surfaces are provided on the housing for attaching the biopsy device to a positioning mechanism.

129. (New) The biopsy device according to claim 96, wherein an upper outer contour of the biopsy needle unit corresponds to an inner contour of the housing.

130. (New) The biopsy device according to claim 96, wherein a plastic part with knurled disk is mounted by friction locking onto a proximal end of the biopsy needle.

131. (New) The biopsy device according to claim 130, wherein the plastic part comprises a polygon, which interacts with the biopsy needle unit and which, when turned by means of the knurled disk, locks the biopsy needle and thus the sample removal chamber in the selected position in the biopsy needle unit.

132. (New) The biopsy device according to claim 96, wherein a base block is positioned in the center of the housing to support and hold components of the biopsy device.

133. (New) The biopsy device according to claim 132, wherein space for a gear motor is separated by a cover connected to the base block.

134. (New) The biopsy device according to claim 132, wherein space for the power source is separated by a separation plate connected to the base block.

135. (New) The biopsy device according to claim 96, wherein the control panel comprises functional displays and operating switches for electronic components of the biopsy device.

136. (New) The biopsy device according to claim 96, wherein the connection element is connected to the biopsy needle by a first plastic part which is able to rotate with respect to the connection element.

137. (New) The biopsy device according to claim 136, further comprising a second plastic part that is sealed off against the first plastic part by means of an O-ring.

138. (New) The biopsy device according to claim 96, wherein the removable element is a sterile packaged unit.

139. (New) The biopsy device according to claim 96, further comprising an insert aid having brackets, a cross-piece and a pin, wherein the biopsy needle unit and the vacuum pressure-generating device are embraced by the brackets, and wherein the pin and the cross-piece orient the biopsy needle unit and the vacuum pressure-generating device along a longitudinal axis of the biopsy device.

140. (New) The biopsy device according to claim 138, wherein the insert aid further comprises two holder pieces on an upper side thereof.

141. (New) The biopsy device according to claim 96, wherein the cutting sheath is moved approximately 2 mm beyond the distal end of the sample removal chamber in the direction of a tip of the biopsy needle when cutting the tissue sample.

142. (New) The biopsy device according to claim 96, wherein when using a coaxial cannula for the positioning of the biopsy device, a seal is provided at the proximal end of the coaxial cannula, preventing the vacuum from dissipating when the biopsy needle is introduced into the coaxial cannula.

143. (New) The biopsy device according to claim 142, wherein one or more spacing pieces are inserted between a proximal bearing surface of the coaxial cannula and a distal end surface of a guide ring.